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NOTES: INFUSORIA, ROTATORIA, ETC.

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[ABSTRACT.]

Under the title "Notes" I offer several minute papers. Most of them are mere suggestions, intended as such, while others record interesting facts, mere fragments of subjects, it is true, but subjects which, ultimately, it may be expected, will receive at the hands of members of our Society exhaustive treatment. It seems best to collect the fragments.

INFUSORIA.

The Stentors.—These charming infusorians one never tires of watching. I think I am more delighted by them at present than when I first made their acquaintance as a beginner in collecting and studying pond-life. During my summer's search for members of the Legion I have found and noted the following species: *S. polymorphus*, *S. Barrettii*, *S. Rœselii* and *S. cœruleus*.

Both *Barrettii* and *Rœselii* were not uncommon on *Utricularia* from ponds at Corunna, Mich., in July. I have no difficulty in distinguishing between these similar forms by noting the differences marked in Kent's *Manual of the Infusoria*, page 593, viz: *Barrettii* is more attenuate, the peristome is erect instead of horizontal in position, and is distinctly bilobate, setose appendages are produced not only from the body but from the entire circumference of the peristome, and has a firmer mucilaginous domicile.

S. cœruleus is not an uncommon form at Buffalo if the one so identified is really the same as *S. cœruleus* of Europe. Kent says of this species: "Body large, the width of the anterior extremity or peristomal border when fully extended equal to one-third the total length." I have recently measured zooids apparently fully extended, with different results; the form is certainly one of the most plastic and extensible infusorians it has been my chance to see. I have witnessed their elongation until the posterior body was thread-like under the inch objective, when the length exceeded the width as sixteen to one, the entire length equaling one-sixth of an inch. Our stentor has some resemblance in outline to *S. multiformis*, a marine type; the nucleus, however, is moniliform, the nodules being united by rather long fibers; not so in *multiformis*. With regard to the plasticity of our animal, interesting facts were published by "J. W." in *The American Monthly Microscopical Journal*, v., 50. This writer concludes: "That the blue stentor not only takes small food particles through the oral aperture, but that it has the means of projecting portions of its protoplasm to serve the purpose of capturing its prey." Rotifers and large Infusoria were actually witnessed drawn into the stentor's body by that method. I have seen nothing like this, but have seen enough of its plastic nature to convince me that it may be so.

Stichotricha secunda.—In the same gathering with *S. Barrettii* and *S. Rœsellii* there were numerous tubes of this hypotrichous infusorian; few of them were inhabited after the weeds bearing them were arranged for observation. The animalcules quite readily desert their house when unusual danger threatens. Not all these tubes were erect, some were adnate, or laterally attached, for at least a part of their length.

Paramecium aurelia.—Dr. A. C. Stokes, in a recent number of *The Microscope* (iv., 127) raises the question of the posterior ciliary tuft of this species. Dr. Stokes says: "In reference to the posterior tuft of cilia, the statement is made by the English authority [Kent] that although Claparède and Lachmann delineate it conspicuously, he regards its presence as 'signalizing a well-marked local modification, but certainly not the predominant type of this cosmopolitan species.' May it not be just possible that the absence of the brush-like tuft signalizes the local variety?" He further says: "All those lately received [from a distant locality], as well as those native to my own neighborhood, possess this posterior appendage beautifully developed." I have to say that according to my observation of local forms the one with the "posterior brush-like tuft" is not uncommon. The variety without it also appears. I am not prepared to say which is the prevailing type.

Trachelocera olor.—A common species, as entertaining as it is common. I have not been able to confirm Kent's observation "That two individuals of this species are almost invariably found in close proximity, and appear to be guided in all their movements by a certain community of action."

Urceolaria mitra, Stein.—An infusorian which appears to be this species is common on a small *Planaria* in the Niagara river. The published figures of the species are poor. Stein's is very poor; its chief error in the representation of the upper ciliary wreath has been corrected by Claparède and Lachmann, but their figure appears to be drawn pretty freely from a zooid recently dead, and the animal very soon after ceasing activity increases in size and entirely loses the graceful form and beautiful appearance possessed by the living forms. The sizes deduced from the figures referred to are quite different. I have carefully measured the zooids when active with results as follows: width of posterior sucker $\frac{1}{600}$ inch, height of body $\frac{1}{800}$ inch. Kent records the length of fully extended animal as $\frac{1}{1600}$ inch; evidently an error.

The sucker by means of which the infusorian fastens to its host I make out thus: the posterior truncate surface is a circular, firm membrane, slightly thickened at the external edge, bordered by an ample ciliary wreath, diameter as above. This membranous base bears in its center a broad corneous ring, the inner edge of which is strengthened by a conspicuous ledge which appears to be roughened fibers wound obliquely about the central circular rod, or it resembles the appearance made by the strands of a rope bent about a circle. Extending radially from this inner wreath to the outer edge of the ring are prominent elevations which appear to be prolonged as corrugations in the basal membrane both without and within the complex corneous ring; these give rise to the striated aspect of the ring mentioned in the diagnosis of the species.

Amphileptus.—I have found cysts similar to that of *Amphileptus meleagris*, Kent, plate 27, figure 46, abound on the stalks of *Opercularia nutans;* a dozen or more on one colony-stock have been noted.

They are nearly globular and equal $\frac{1}{600}$ of an inch in diameter. A much larger one occurs on the pedicle of *O. rugosa;* the cyst walls are much thinner than the former and smooth. Slightly oblong; length $\frac{1}{200}$ of an inch, width $\frac{1}{300}$ of an inch. Contents coarsely granular, yellowish green. I have been unable to make out the species; it seems to me that it cannot be *A. meleagris*.

ROTIFERA.

The Floscules.—Prof. C. T. Hudson has recently favored us (*Journal Royal Microscopical Society*, iii, 161) with a clear synopsis of the characters of the eleven species of *Floscularia*. By means of this key and by reference to original descriptions and figures I have identified the following American species: *F. trifolium*, *F. ambigua*, rare, a few seen at Corunna, Mich., *F. cornuta*, *F. ornata*, and *F. coronetta*. Dr. T. S. Up de Graff has identified at Elmira, N. Y., among other species, *F. regalis*. He kindly showed me drawings of it made by himself before it was described by Professor Hudson.

Stephanoceros Eichhornii.—This rotifer appears to be common in Europe, and numerous references and several accounts with excellent figures of it may be consulted in English microscopical publications. It has not been often mentioned as occurring in this country. My comrade, Mr. Henry Mills, and myself obtained it from a pond in Canada, not far from Buffalo, in June last. It was not plentiful, but several examples could be found in an evening's search. Our rotifer possesses one interesting difference from the European, if we may judge from the descriptions and figures in the *Monthly Microscopical Journal*, iii., 1870, from those in the current volume of the *Journal Royal Microscopical Society*, and elsewhere. The cell or tube (Rossiter) is represented to be composed of a few—six, more or less—lobes or thick rings placed one above another. In ours there are at least twenty thin ones superimposed, making the cell rugose transversely. This character was not well seen until carmine was added to the water containing the animal.

Daphnia kerusses, Cox.—This elegant and remarkable water-flea was named and published by a sketch in the *American Monthly Microscopical Journal*, iv., 88, by the President of this Society. It was found in Fox river at Appleton, Wis. A few days since Mr. Henry

Mills and myself, while "fishing" for sponges in the creek at Hamburg, N. Y., obtained a *Daphnia*, which we unite in identifying as *D. kerusses*. As it was discovered by accident after we had reached home, in material collected, we cannot say how abundant it may be in this stream, which, as it flows over shale throughout most of its course, carries much fine sediment. The falchion-shaped beak was found to be relatively somewhat shorter than in the type; in every other respect there appeared to be the closest agreement.